

AMENDMENT TO THE CLAIMS

Claims 1-5 (Canceled)

Claim 6 (New) A microchamber for nerve cell culture, which comprises a plurality of electrode patterns on a substrate for measuring a potential change of nerve cells, a plurality of compartment walls over the patterns for confining the nerve cells in a specific spatial arrangement, and an optically transparent semipermeable membrane laid over the compartment walls.

Claim 7 (New) The microchamber for nerve cell culture according to Claim 6, wherein stimulation to the nerve cells and measurement of a potential change of the nerve cells are carried out by the same electrode located in the electrode patterns.

Claim 8 (New) The microchamber for nerve cell culture according to Claim 6, wherein the electrode patterns are optically transparent electrodes.

Claim 9 (New) The microchamber for nerve cell culture according to Claim 6, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

Claim 10 (New) The microchamber for nerve cell culture according to Claim 6, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 11 (New) The microchamber for nerve cell culture according to Claim 6, wherein the number of regions of the cells isolated each other by the plurality of compartment walls is three or greater.

Claim 12 (New) The microchamber for nerve cell culture according to Claim 6, wherein with regards to the electrode patterns and the regions of the cells isolated each other by the plurality of compartments, the electrodes correspond one-to-one with the regions.

Claim 13 (New) A microscopic system for cultivation and measurement of nerve cells by using a microchamber for nerve cell culture as claimed in Claim 6, which comprises fixing a substrate of the microchamber for nerve cell culture to a holder; mounting the holder on a multielectrode primary amplifier attached to a microscope stage, observing the nerve cells in the microchamber for nerve cell culture via a microscope, and measuring and recording a change of the state of the nerve cells by an information recording apparatus based on the observation data thus obtained.

Claim 14 (New) A microscopic system according to Claim 13, wherein the nerve cells and the information recording apparatus are insulated each other at a ground level in the multielectrode primary amplifier by optically connecting them.

Claim 15 (New) The microchamber for nerve cell culture according to Claim 7, wherein the electrode patterns are optically transparent electrodes.

Claim 16 (New) The microchamber for nerve cell culture according to Claim 7, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

Claim 17 (New) The microchamber for nerve cell culture according to Claim 8, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

Claim 18 (New) The microchamber for nerve cell culture according to Claim 15, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

Claim 19 (New) The microchamber for nerve cell culture according to Claim 7, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 20 (New) The microchamber for nerve cell culture according to Claim 8, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 21 (New) The microchamber for nerve cell culture according to Claim 15, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 22 (New) The microchamber for nerve cell culture according to Claim 9, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 23 (New) The microchamber for nerve cell culture according to Claim 16, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 24 (New) The microchamber for nerve cell culture according to Claim 17, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

Claim 25 (New) The microchamber for nerve cell culture according to Claim 18, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.